



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

YAMAMOTO : Group Art Unit: 1752

Application No. 10/614,095 : Examiner: Thorl Chea

Filed: July 8, 2003

For: PHOTOTHERMOGRAPHIC MATERIAL AND METHOD FOR PRODUCING
SILVER HALIDE USED FOR ITDECLARATION UNDER 37 C.F.R. §1.132Honorable Commissioner of Patents and Trademarks
Alexandria, VA 22313-1450

Sir:

I, Seiichi Yamamoto, do declare and state as follows:

I graduated from Tohoku University with a Master's Degree in Science, Department of Chemistry in March 1990;

I joined Fuji Photo Film Co., Ltd. in April 1990, and from 1990 to 2000, I was engaged in research and development in the field of silver halide photographic photosensitive materials for printing at Ashigara laboratory. Since 2000, I have been engaged in research and development in the field of photosensitive materials for medical use at Digital & Imaging Material Laboratories;

I am familiar with the Office Action of November 5,

2004, and understand that the Examiner has rejected Claims 1-4 and 7-12 under 35 U.S.C. §112 and Claims 1-12 under 35 U.S.C. §103(a) as being unpatentable over the combination of Ikari in combination with Farid and JP 2000-066325.

I am the inventor of the invention. The following additional comparative experiments were carried out by me or under my supervision in order to make the advantages of the subject matter more clear.

Experiment A

Photothermographic material samples 1-8 to 1-11 were prepared in the same manner as in the preparation of the sample 1-1 described in Example 1 of the specification (US 10/614,095) except that the distribution of Ir and the metal other than Ir in the silver halide grains were changed to the distribution and the metal shown in Table 7. The samples were thermally developed in the same manner as in Example 1 of the specification (US 10/614,095) and photographic performance and image preservability thereof were evaluated in the same manner as in Example 1 of the specification (US 10/614,095). The results are shown in Table 7.

The comparative silver halide emulsions 10 and 11

contain silver halide grains comprised of the core portion constituting 30 mol% of the total amount of the silver halide and the shell portion constituting 70 mol% of the total amount of the silver halide. The core portion does not contain Ir and the shell portion contains the entire Ir content. The ratio of core portion to shell portion and the distribution of Ir are the same as in Ikari.

In the claims of the present application (US 10/614,095), the core of the grain corresponds to 50 % of the total mol% of silver halide in the grain. In order to avoid confusion, the internal portion of the grain constituting 50 mol % of the total amount of the silver halide is referred to as "interior portion" hereinafter. If the interior portion of a grain does not contain at least 90 % of the total amount of Ir, the grain is excluded from the scope of the claimed invention.

In the samples 1-10 and 1-11, the interior portion defined above is comprised of the entire core portion and 2/7 ($=(50-30)/(100-30)$) of the shell portion. Therefore, the interior portion includes 2/7 (approximately 29 %) of the total amount of Ir. Therefore, the samples 1-10 and 1-11 are comparative examples and excluded from the scope of the invention.

As is clear from Table 7, when more than 90 % of the total amount of the Ir complex is doped into the interior

portion, the printout is unexpectedly improved compared to the case where only 29 % of the total amount of the Ir complex is doped into the interior portion.



Table 7

Silver halide emulsion	Core		Shell		Metal other than Ir (%)	D _{min}	Sensitivity	Print out	Remarks
	Core portion (%)	Ir (%)	Metal other than Ir (%)	Ir (%)					
8	30	90	—	70	10	K ₄ FeCN ₆	1-8	0.16	103 0.03 Invention
9	30	90	—	70	10	K ₄ RuCN ₆	1-9	0.16	103 0.04 Invention
10	30	0	—	70	100	K ₄ FeCN ₆	1-10	0.17	102 0.08 Comp. ex.
11	30	0	—	70	100	K ₄ RuCN ₆	1-11	0.17	102 0.08 Comp. ex.



Conclusions

The present invention showed unexpectedly greater improvements in suppression of printout.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and like so made are punishable by fine or imprisonment, or both, under section 1001 of title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATE: January 28, 2005

Seiichi Yamamoto

Seiichi Yamamoto